

Systemic Design goes between disciplines for the sustainability in food processes and cultures

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2015 AESOP

7th Sustainable Food Planning Conference

Torino, 7-9 October 2015



LOCALIZING URBAN FOOD STRATEGIES **Farming cities and performing rurality**

Edited by: Giuseppe Cinà and Egidio Dansero

Proceedings

2015 AESOP

7th Sustainable Food Planning Conference

Torino, 7-9 October 2015

LOCALIZING URBAN FOOD STRATEGIES **Farming cities and performing rurality**

Edited by: Giuseppe Cinà and Egidio Dansero

LOCALIZING URBAN FOOD STRATEGIES
FARMING CITIES AND PERFORMING RURALITY
7TH INTERNATIONAL AESOP SUSTAINABLE FOOD PLANNING CONFERENCE PROCEEDINGS
TURIN, ITALY 7-9 OCTOBER 2015
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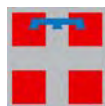


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The 7th AESOP SUSTAINABLE FOOD PLANNING CONFERENCE

One of the main goals of the Association of European Schools of Planning (AESOP) (www.aesop-planning.eu/) is to acquire “a leading role and entering its expertise into ongoing debates and initiatives regarding planning education and planning qualifications of future professionals”. In this frame, the AESOP thematic group “Sustainable Food Planning” (www.aesop-planning.eu/blogs/en_GB/sustainable-food-planning) find its rationale recognizing that “Fashioning a sustainable food system is one of the most compelling challenges of the 21st Century. Because of its multi-functional character, food is an ideal medium through which to design sustainable places, be they urban, rural or peri-urban places. For all these reasons, food planning is now bringing people together from a wide range of backgrounds, including planners, policy-makers, politicians, designers, health professionals, environmentalists, farmers, food businesses, gastronomists and civil society activists among many others”.

In 2015, after having been hosted in England, Wales, Germany, France and the Netherlands through out this time providing a unique forum for cross disciplinary and interdisciplinary exchanges, the 7th Annual Conference of the AESOP thematic group SFP has been held in Torino, Italy (October, 7-9).

The Torino Conference (*Localizing urban food strategies. Farming cities and performing rurality*) aimed at exploring new frontiers of education and research, drawing inspiration by policies and practices already implemented or still in progress, and in the meantime bringing advancement over some key issues already tackled during previous SFP conferences.

To this end, *Localizing urban food strategies* implied to relate education and research as well as policies and practices, to the national, regional and local levels, not only as administrative scales but as physical and cultural contexts in which food discourses have a deep influence on urban and regional planning agendas.

In this light *Localizing* meant:

- to connect scales of discourse and action: how we can promote, co-produce, analyze and compare urban food strategies in different places, linked together by common goals of SFP that valorise the role of local territories and policies, but also by global food networks that have a strong geopolitical power on local contexts.
- to better understand the possible contribution of the different places in building a *glocal* discourse on food planning, in line with the general debate brought forward by United Nations agencies (i.e. UNCHS and other agencies and networks) on the localization of Sustainable Development Goals after 2015;
- to stress the role of the local dimension, remaining conscious, on the one hand, of the risk of “local traps” and, on the other hand, of the isomorphism of a flat world in which “local” is mostly a rhetoric behind the so-called “green washing” process;
- to build a local insight in which the different disciplines and knowledge are re-connected by re-considering food systems: scholars and practitioners are called to apply their theoretical and operational perspectives in order to frame and perform in local terms their idea on urban food strategies.

In general terms, the Conference focused on the following goals:

- to reinforce the struggle for food safety and the environmental protection in the Global North and South;
- to provide a proper insight on how current training and research programs meet the new challenges of food planning in different countries and cultural contexts;
- to shape the key perspectives which food planning must deal with: governance, disciplinary innovation, social inclusion, environmental sustainability;
- to consolidate the network of planning practitioners, policymakers, scholars and experts dealing with SFP in Europe and beyond.

More in detail the following issues have been addressed:

- how to develop a social and spatial strategy aimed at the achievement of a SFP and to answer to the specific conditions of different urban/metropolitan contexts;
- how to provide a thorough technological innovation able not only to orient global responses towards food security but also to enable locally appropriate solutions that take into account ecosystem cycles;
- how to develop food planning policies able to connect in a multilevel governance approach the different scales from micro (urban districts) to city-region and to national and international food policies;
- how to secure a more important role for farmers as basic stakeholders of food planning;
- how to sustain a broader inclusion of food planning issues in the research and the educational system, connecting knowledge and disciplines from urban, rural and food studies in building a new planning domain.

The conference in numbers

The papers presented in these proceedings have been selected by a group of experts being part of the scientific committee. We received 118 abstract proposals of which the scientific committee selected 84 while 65 of them were presented at the Conference. Moreover, the poster Session included 24 contributions. The present proceedings include 49 full papers.

Transcriptions of key-note presentations (by Serge Bonnefoy, Gilles Novarina, Wayne Roberts, Jan-Willem van der Schans), the special guest speech (by Carlo Petrini) and the opening remarks are not included in the following proceedings. However, video recording of these interventions and of the overall Conference are available on the Conference website

(http://www.aesoptorino2015.it/the_videos) and on the AesopTorino2015 YouTube channel.

Our heartfelt thanks go to all those who have contributed in making the 7th AESOP conference on Sustainable Food Planning a success.

We are thankful to all the students and the volunteers that supported us before, during and after the conference and in particular to: Francesca Basile, Silvia Borra, Alessandra Michi, Ginevra Sacchetti, Stefania Mancuso, Valeria Squadrito, Sara Muzzarelli, Simone Pirruccio, Alberto Keller, Elisa Gemello, Chiara Marchetto, Chiara Fratucello, Giulia Franchello, Rossella Bianco, Tatiana Altavilla, Alessandra Rauccio, Matteo Faltieri, Lorenzo Bottiglieri, Filippo Bolognesi, Roberta Garnerone, Alberto Cena, Silvia Zucchermaglia, Andrea Aimar, Andrea Coletta, Yaiza Di Biase, Alessandro Ventura e Ramona Manisi.

The Editors
Giuseppe Cinà and Egidio Dansero

THE AESOP SUSTAINABLE FOOD PLANNING GROUP

Since establishing the Sustainable Food Planning Group in 2009, we have been interested in building cross disciplinary dialogues between practitioners, academics and activists concerned with developing equitable, sustainable, healthy and enriching food systems.

Giuseppe Cinà and Egidio Dansero, who have planned and designed this 7th AESOP sustainable food planning conference, continue to pursue this aim, so that once again we see an expanding and dynamic community of practice.

Turin, with its close connections to the Slow Food Moment, the Milan South Agricultural Park and the Milan EXOP 2015 *"Feeding the Planet, Energy for Life"* resonates with our interests in real world issues, for example how to translate individual practices into policy.

Alongside our strong multidisciplinary focus we have a particular strength in the age and gender profile of our participants, presenting a unique opportunity for building future capacity. To that end the Sustainable Food Planning Group wishes to consolidate our network by putting in place a more clearly defined framework for electing committee members and, as a priority, expanding our "new and emerging researchers' group". This process has been initiated during the conference.

I would like to thank our secretary Arnold van der Valk and our new and emerging researchers' group co-coordinator Coline Perrin for their invaluable and reliable input.

And we look forward to the 8th Sustainable Food planning Conference, being co-ordinated and hosted by Michael Roth at Nuertingen-Geislingen University, in Germany, between the 21st and 24th of September 2016. Finally to see live keynote presentations go to: http://www.aesop-planning.eu/blogs/en_GB/sustainable-food-planning and to access the Sustainable Food Planning Group's website which includes information about earlier conferences go to: http://www.aesop-planning.eu/blogs/en_GB/sustainable-food-planning.

Chair of the AESOP Sustainable Food Planning Group

Andre Viljoen

December 2015

THE EATING CITY INTERNATIONAL PLATFORM

Who is Risteco

Risteco was born as the environmental department of the Italian SME Sotral S.r.l., a company specialized in food transport and logistic services for public catering. Risteco has then become a no-profit consortium in 2005, which gathers actors working in support services to catering industry.

Aware that economical development is compatible with suitable environmental quality, Risteco has assumed the following mission: the formulation of public catering development strategies based on the improvement of communication between stakeholders and on the results of technical and scientific innovation, and aiming at the integration between environment, social responsibility and Human Work.

The main objective of Risteco is "to promote the sustainable development in Public catering". Risteco especially aims, evidencing economical returns, to share its own conviction that it is possible and advantageous to work according to ethics and sustainable development principles.

Risteco pursues its goals by creating a meeting platform "Eating City" with other professional sectors such as scientific communities, institutions, associations etc. to promote sustainable development within food services according to Life Cycle Thinking approach.

The ideal place where Food, Health and Environment meet Business

Our Vision

To handle Food issues, Cities must revise their usual competences. To do so, they need to build up a vision in which feeding people shifts from its mere definition to a more systemic understanding.

Indeed, food is not only a sum of calories and nutrients necessary to make our body working, but it is embedded in a whole system that influences our quality of life and includes all activities and actors necessary to grow, harvest, process, package, transport, market, consume, and dispose food and all food-related items.

This life-cycle thinking approach allows to build a model of food lifespan from origin to plate that makes possible to identify all food-related activities and infrastructures in and out the city and to design an organization chart that connects all stakeholders and infrastructures involved in the food supply chain, giving them a role and a responsibility.

Through a deep cultural change, Cities Food Policies may turn food into a thread to connect all the main competences of the cities related to economic development, education, health, environment, solidarity, culture and leisure, governance, but it can also give consistency to a synergic osmosis between cities and adjacent territories.

Our Process

Deeply convinced that all activities related to food production and consumption are essential for the sustainable development of cities, Risteco aims, with the project "Eating city", to carry on the dialogue, in order to foster long term vision of public & and private decision makers on the future of sustainable urban food supply chains worldwide.

In short, Eating City platform designs a road map to contribute to the construction of a new economic paradigm that aims to place again human labor at the center of economy and to consider the environment among the entrepreneurial decision variables, in order to develop a new culture of doing Business.

Eating City process moves forward through the summer campus, thematic workshops and conferences.

www.eatingcity.org

Wwinfoon 3 main pillars : Food Production, Food Consumption and Human Labour.

Maurizio Mariani

SHORT SUMMARIES OF THE CONFERENCE SESSIONS

TRACK 1 / SESSION B

Cristoph Kasper spoke about 'Food as an infrastructure in Urbanizing Regions', the sequel to a comprehensive research project exploring the genesis and promotion of urban agriculture conducted in the city of Casablanca. The proposed research design met with approval in the audience. Urban agricultural in a regional perspective is an emerging topic which attracts much attention from organisations such as FAO and RUAF. In the second presentation Giuseppe Cinà focused on the blurring of the traditional rural-urban nexus. Only too often agriculture is considered to be the left-over in a process of deliberation about the future prospects of metropolitan regions. Some observers in the audience provided illustrations of the need to consider the interests of agriculture in the context of urban planning in other European countries such as the Netherlands and the UK. The ongoing conference opens windows on an issue which merits attention of the EU. One obstacle is the isolation of different aspects in separate policy sectors such as agriculture, environment, transportation and economics. Fanny Carlet, the third speaker in this slot, presented the results of her research of urban agriculture as an element of greening strategies in American cities which have to cope with industrial brownfields, so-called Legacy Cities. Urban agriculture is perceived as an effective strategy to reclaim vacant lots in the inner city. Well known examples are the city of Detroit and the city of Buffalo.

The last speaker was Daniela Poli who presented the results of her research on Sustainable Food and Spatial Planning in the context of agro-urban public space in Italy. She focuses on the bio-regional dimension of regional urban development. In this session disparate perspectives on urban agriculture were discussed. The common thread was the shared conviction that agriculture is an emerging field of study and planning in the context of regional spatial planning.

Arnold van der Valk

TRACK 1 / SESSION C

During the session different visions, policies and practices concerning the design and the planning of urban and peri-urban agriculture have been discussed.

The two first presentations addressed some distinct but convergent experiences. That of Andre Viljoen and Katrin Bohn, based on a set of various interventions spread out in the porosity of the contemporary city (brown field, vacant areas, unused areas etc.) was related to the line of research developed around the concept of 'continuous productive landscape', today fostered by an international network. In particular, the speakers gave a short account on how policies and practices at various levels have impacted and still are influencing on the implementation of six European urban agriculture projects, led mainly by architects, artists and researcher activists, and how these experiences can help to identify future pathways to enhance a productive urban landscape infrastructure.

Differently, in her presentation Susan Parham specially focused on some issues of urban periphery of burgeoning conurbations, arguing that in order to support 'gastronomic landscapes' as well as to remake the edge of conurbation space, a new range of design-based tools is now available. These new tools, also based on retrofitting techniques, can address food-centred sprawl repair and give an upgraded role to spatial design in supporting productive peripheries.

The following two contributions introduced two additional approaches to productive urban landscapes. In the presentation of Matthew Potteiger what mattered was not so much about activating a productivity starting from scratch, but rather to 'use' the existing one by integrating 'productive ecologies and foraging' at the landscape scale. To this end the findings of an ethnographic research on urban foraging in Syracuse, NY, were presented and some proper strategies responding to the opportunities for urban foraging and productive ecologies were discussed.

Also Jaques Abelman addressed its research toward the use of the resources of local ecology (or 'infrastructures of abundance') in urban Brasil, but in this case he clearly adopted a design strategy by proposing a network of urban agriculture typologies consistent with the nature of Puerto Alegre. In this frame, by emphasizing the fruitful connections between agro-forestry and native species, a basis for dialogue among potential stakeholders as catalysts for future projects is created; as a result the landscape architecture project become a mediator in processes aiming at envisioning just and sustainable urban and peri-urban agriculture.

In the final presentation, by adopting a point of view focused on both food issues and land use planning, Bruno Monardo and Anna Laura Palazzo proposed a further insight on a territorial based approach. In this frame the authors discussed the case study of San Diego Region (CA), showing how the goals of a sustainable food system are addressed by a set of instruments ranging from food policies to land use tools and zoning codes, mobilizing from the very beginning the community at large: producers, brokers, consumers. So doing, the case study is discussed looking at some effective tools and operational aspects but also prompting for new meanings and uses for vacant land.

Summing up, the presented experiences showed on the one hand the increasing set of policies and practises underway in several countries, and on the other hand the work in progress of research in drawing attention to the big potentialities of urban and territorial resources for a sustainable agriculture.

Giuseppe Cinà

TRACK 1 / SESSION D

Over the last decades the urban and the rural have become increasingly difficult to differentiate. Yet, both the powerful cultural resonance of such distinction and the traditional separation between human and natural sciences have led, even when tackling matters such as urban growth and open space strategies, to the supremacy of the “standpoint of the City”, providing unvarying interpretations of the urban fringe as a mere receptacle for sprawl.

Empirical evidence shows that these transformations can less and less be interpreted as transitions from low-density patterns towards an overall urban condition in the sense we are used to think of.

Open space proves the main asset in sustainable food policies, while remaining crucial for biodiversity enhancement, protection of natural and spatial values, soil protection, promotion of open-air facilities for leisure time.

Thus, urban farming is going to play a role that goes far beyond that of supplying essential food products, while counteracting rural unemployment. A common denominator is social integration, which is a fundamental element in any regeneration process. Relevant work from this point of view was done by the Italian “Territorialist” School that, for some time now, has been working on community-building processes through an active participation in decision-making related to sustainability issues of our living environments.

In this session, along with local healthy food concerns, the point is to come to grips with an idea of resilience embedding spatial coherence and landscape connectivity both at the local and territorial scale.

The first paper, “Sustain-edible city: Challenges in designing agri-urban landscape for the ‘proximity’ city” by David Fanfani, Sara Iacopini, Michela Pasquali, Massimo Tofanelli, explores residual farmland in the urban fringe of Prato and stresses its effectiveness both in giving shape to rural areas and in providing commodities to the Italian and Chinese communities settled in the City.

The second paper, “A Metropolitan Footprint Tool for Spatial Planning”, by D.M. Wascher and Leonne Jeurissen, explores the ecological footprint in the Rotterdam Region. The contribution stresses that food production and consumption is not only linked via one-directional food chains in terms of processing and logistic pathways, but also part of cross-sectoral and hence multidirectional value chains associated with bio-economy.

The third paper, “Vertical farms as sustainable food production in urban areas”, by Radu Mircea Giurgiu, Fritz-Gerald Schröder, Nico Domurath, introduces to Vertical Farming, which allows for high construction and operating costs, in exchange for high quality and quantity of fresh food all year round.

The fourth paper, “The potential of peri-urban and ecotonal areas in resilience strategies design. Milano metropolitan panorama and perspectives”, by Angela Colucci, intercepts a wide range of initiatives tackling resilience and challenging collective perceptions, planning standards and rules regarding food management strategies.

What new insights can we draw from this review?

Conceptually speaking, the core problem is to bridge the privileges of the urban condition - the sharing of social and civic value - with the benefits of the countryside - a better living environment, a healthier lifestyle, and also a level of “naturalness” on the outskirts of the city. In practical terms, the “shape-giving” potential of the ongoing experiences is still to be explored and assessed, along with the different rural patterns. Beyond the consideration that a “good form” is a vehicle for a healthy ecological system, these experiences offer a “case-

by-case” set of arguments against the “individualistic” centrifugal impulse related to urban sprawl and convey all-pervasive practices of re-appropriation.

Anna Laura Palazzo

TRACK 2 / SESSION A

Positioning within the broader sphere of sustainable food governance, the session aimed at reflecting upon the role of food policies in addressing social, cultural and economic dynamics. The contributions presented during the session focused on various issues, as the conditions of Afro-American community in the United States, the actual political implications of New York City’s food policy and the configuration and self-reproduction of food governance regimes in Newcastle (UK).

More in detail, in her analysis of the historic and current use of social enterprise in food system and agricultural markets in the North-East of the United States, Lisa V. Betty focused on the role of the latter as a potential antidote to the systemic weakening of African descended communities. The author did this by exploring the historical relevance and current necessity for grassroots social enterprise and entrepreneurship, from the base of underserved communities overwhelmed by hyper-incarceration and underemployment, to support the production of community empowering capital with prospects for economic growth in food system and agricultural markets. She analyzed various organizations that are at the forefront of supporting and advocating for employment training and entrepreneurship support, policy changes, community development, and empowerment for correctional controlled individuals and underserved communities of African descent through the alignment of solutions for individual and community development with food system advocacy.

On his hand, Nevin Cohen proposed a thorough analysis of New York food policy under mayor De Blasio as a way to promote social equity in the city. He argues that, whereas an increasing number of US mayors have responded to widening economic disparities and increasing attention to racial discrimination by adopting populist political agendas, an important question for food planners is whether and to what extent this political shift has affected the urban food systems. As the proposed case illustrates, food policy appears to be shaped by governance networks including stakeholders who have interests in maintaining the status quo, and therefore contribute to hinder policy change together with other factors as budget scarcity, established laws and programs, entrenched agency conventions, competing political priorities and existing state and federal regulations. As a result, food policies and programs developed by the Bloomberg administration continue largely unaltered, demonstrating the complexities of redesigning food policy to fit different political priorities.

A third contribution by Jane Midgley focused on local food governance arrangements in Newcastle, paying particular attention to recent changes regarding different actors’ perceptions and involvement with the potential creation of a holistic food policy for the city. The paper highlights the important role played by external elements as funding bodies, government targets, evaluation mechanisms etc. in stimulating local food-related policy initiatives. Even though external conditions may change over time, the appropriateness and awareness of food may be more continuous than at first appears. The linkages to existing policy areas and associated support (i.e. public health) appear to be initial facilitators of food policy debates within existing policymaking structures but also potential framework constraints due to their association with other more powerful discourses (e.g.: obesity and the associated food-based policy measures). Towards the end of the session, an intense debate took place, surrounded by the general willingness to examine in depth both individual players’ and municipalities’ responsibility, in order to strengthen those beneficial effects for the civil society that could potentially come from sustainable food policies and initiatives.

Giancarlo Cotella

TRACK 2 / SESSION B

The session featured two presentations analyzing the social interaction between citizens, the food production and food policies’ development and implementation, based on well documented case studies. The first one presented two examples of urban farms in Amsterdam, as an entry point to discuss citizen participation in urban planning and the role of planners and local authorities in business or community initiatives. The second one presented the FAO-RUAF programme on assessing City Region Food Systems (CRFS), currently

implemented in seven city regions. After having described the conceptual framework and assessment methods, the authors underlined the key role of information exchange, political will and multi-actors participation in order to build a more inclusive multilevel food governance.

Coline Perrin

TRACK 2 / SESSION D

To face the new challenges, food-systems need innovation. To foster innovation, food-systems need to combine different orders of worth or “quality conventions”. In this regard, search for the optimal solutions through more information it is not enough. Search means above all interpretation, not just finding a solution for a well-defined problem. In other words, innovation in food-systems means to accept the idea that the fundamental challenge is the kind of search during which you do not know what you are looking for but will recognize it when you find it. As David Stark (*The Sense of Dissonance. Accounts of Worth in Economic Life*, Princeton, Princeton University Press, 2009) reminds us, John Dewey called this process inquiry. Inquiry, differently from problem solving, involves the management of “perplexing situations” or a disagreement about what counts. Innovation is precisely the ability to keep multiple principles of evaluation in play and to benefit from that productive friction. Systems of food need thus to be arranged as forms of distributed intelligence, where units are laterally accountable according to different principles of evaluation, that makes entrepreneurship and innovation possible. The environment of modern economy resembles a “rugged” fitness landscape with a jagged and irregular topography, with many peaks and many optimal solutions. In such an environment, the most innovative solutions are those able to promote radical decentralization in which virtually every unit becomes engaged in innovation. In all the papers, it is clear that orders of worth different from market and prices provide an account of “what matters” in the world and how the “world works”, so they also serve as a blueprint for regulatory experiments. In cases such as those, new social technology of judgment emerge as something more than market mechanisms that mimic competition through regulatory devices, This is the *fil-rouge* of the papers presented in the session: innovation needs hybridization and new forms of governance. For instance, both the agrofood system and the health care system are known for their sector specific rules and routines. These routines in general do not favour innovations that transgress the borders of the sector. Change makers, who cross borders without hesitation, linking the health care and agrofood sector in new organizational arrangements. But also urban gardens take on different forms and meanings, combining different governance principles and organizational solutions.

Furthermore, sustainable food planning assumes an 'unbridgeable gap' between the conventional agribusiness complex of industrial food production and the alternative urban localecological food movement, with the latter having grasped the attention and imagination of recent planning scholarship. Finally, if food is the most essential component for human life, it is still unclear how this right could become a priority within institutional policies, when choices related to food and nutrition are mainly sectorial and only rarely characterized by a strategic, coordinated and coherent approach.

Filippo Barbera

TRACK 3/ SESSION A

Over the past ten years a lot of technical tools have been developed for supporting both analytical as well as planning activities in the context of urban and periurban agriculture and horticulture.

Some of the main fields of development of such tools can be synthesized in the following points:

- rules and knowledges concerning access to land, facilities and infrastructure to give farmers, distributors, and food entrepreneurs a chance to become established;
- policies and standards to encourage local food operations and to reduce the cost and uncertainty of urban farming in the more comprehensive context of food systems;
- policies and regulations for local food procurement for schools as well as other public canteens and hunger assistance programs, as a part of welfare policies and for encouraging new markets, innovations, businesses, and entrepreneurs.

In the context of these fields of technical assistance to actions, plans and policies, there are some emerging areas of investigation that are consolidating some specific roles for researchers in relation to the existing and diffused actions that are carried on by activists, non-profit associations, private initiatives or business entrepreneurs for social as well as commercial purposes. One area of investigation is about the creation and the implementation of technical tools to support analysis and evaluations of urban agriculture and horticulture, with a focus on the evaluation of sustainability.

In this direction some recent experiences that have been developed in Berlin and in Barcelona are trying to combine life cycle assessment (LCA), to quantify the environmental impacts of Urban Rooftop Farming (URF) forms; and life cycle costing (LCC), to quantify the economic costs of URF forms. This combination is a technical base to support the implementation of different kind of existing tools in the context of urban horticulture, taking advantage of the fact that rooftop farming can provide a kind of living laboratory with less analytical variables than other farming activities.

The different life cycle analysis qualitative research can be used to support and counterproof the evaluation of the perceptions of different stakeholders and, beside this, can feed a geographic information systems (GIS), to quantify the availability and the localization of potential roofs for implementing URF. These kind of tools have a potential in supporting the quantification and comparison of the environmental and economic aspects of different URF types and practices to inform stakeholders in decision-making processes.

More in general and not only for rooftop gardening, for planning, designing and evaluating a sustainable, local food system for urban areas a spatial typology of urban agriculture is required. An example of this kind of definition and classification have been studied and applied in the Netherlands by combining spatial analysis, property analysis, and the classification of the kind of food production, in order to define a tool that can support decision makers to evaluate the capability of each farming initiative to contribute to a more general plan for urban farming at a city level.

What is emerging in these experiences of definition of analytical tools for evaluation and planning, is the need of breaking the limits of land use planning that are mainly based on real estate values or on the combination of traditional urban functions. Urban agriculture and horticulture implies a lot of different values, objective, activities and interests: so we do need different point of views, planning principles, expertise and, finally, tools. In this directions, the papers of this section are a good combination of a re-orientation of existing tools for evaluating the sustainability of a system, and the proposal of new tools for taking into consideration new issues to combine food and urban contexts.

Andrea Calori

TRACK 3/ SESSION B

Urban agriculture is the term used to define agricultural production (crops and livestock) in urban and peri-urban areas for food and other uses, the related transport, processing and marketing of the agricultural produce and non-agricultural services provided by the urban farmers (www.hortis-europe.net). The session discussed methods and approaches for linking urban agriculture and food planning through some applicative research projects and practical experiences moving from USA to Europe. In particular, the papers were focused on two elements of the urban food system: the community gardens and the local markets. Community gardens are plots of land managed by volunteers for the purpose of open space, food production, self consumption, or many other educational and recreational functions. Local markets are in Europe related to specific architectures and an old selling system (most of vegetables and fresh products).

The first contribution by Giorda E. reported the case of Detroit (USA), post-industrial city similar with Turin, in which the approach in urban renewal is based on taking care of people providing home and food to homeless. Then we moved to the Spanish research (Garcia-Fuentes J.M. and Garriga Bosch S.) on the restoration of local markets and their role in the local food chain in Barcelona.

The case of a participatory project for the realization of a community garden in Chicago (USA) reported by Bon P. pointed out how the stakeholder involvement guarantee the success of the process and the future use of the place by citizens overcoming conflicts of interests.

The last experience (Cavallo A. and Di Donato B.) described an ongoing process in the metropolitan area of Rome based on the construction of a local food strategy in the context of the big sprawl of the city.

Some common elements emerged from the discussions:

- The importance of a bottom-up approach for the success of the food planning strategy, which must be participatory based.
- The need to quantify the ecosystem services provided by rural areas with the aim to recognize them in terms of farmers income.
- The idea that in the cities the presence of 'public food places' (like community gardens or local markets) is important not only in terms of food provisioning but also in terms of social aggregation and multicultural integration.
- The fact that a 'good' urban food chain is short, local and democratic.

In conclusion further researches for defining the real potentials of urban and peri-urban agriculture in providing food and services to citizens are required. Furthermore mapping the ecosystem services in the urban ecosystem can be the first point for a more sustainable urban planning strategy.

Federica Larcher

TRACK 3/ SESSION D

This session saw a refreshing mix of presentations highlighting the specific local contexts of aspects of urban agriculture – practical and theoretical - that have emerged / are emerging in different European countries. Urban agriculture was in the centre of all presentations, but investigations ranged from the studies of urban farms (Switzerland) and of urban allotments (Portugal) to the exploration of appropriate logistical systems for food stuffs (The Netherlands) to the emergence of community gardens (Italy) to the study of cultural frameworks for urban food production (Germany/UK).

What kept the papers together and served as the basis for vivid discussion amongst the 25 or so session participants were the relationships of particular local urban agriculture practices to their equally particular local cultures and customs. So was it very important to understand the emergence of a community garden culture in Perugia, Italy, in the light of recent economic changes or the development of planning typologies in tandem with the study of existing food production practice on the example of urban farms in Switzerland. The historical dimension of urban agriculture practice was related to current social conditions, as in the example of long-established versus spontaneous allotment gardens in Lisbon, Portugal, or the dramatic increase of community gardens in Perugia originating from victory garden predecessors.

Whilst 3 of the papers took a very practice-based approach, one paper aimed to discuss a concept that may provide an overarching cultural framework to urban agriculture practice and food-related lifestyles. Introducing the concept of Second Nature in relation to urban agriculture, the paper triggered discussions in the audience about other philosophical/cultural concepts, such as the one of biophilia, which were then applied to all papers presented.

Finally, it was a pleasure to integrate a relocated paper that dealt with logistical and managerial aspects of urban food growing focussing on The Netherlands. This paper on how to fine-tune transport and delivery of food products gave the session a "reality check" on the practical transformations that food-productive cities will have to undergo in the future.

Katrin Bohn

TRACK 4/ SESSION A

The presentations report various experiences through which educational and training programs deal with sustainable urban food planning.

Taze Fullford and Artunc (Mississippi State University) are identifying local opportunities for service learning projects and the opportunities to lessen the effects of food deserts in rural areas. They discuss advantages and disadvantages of using a service-learning pedagogy in classrooms for planning and designing ecologically sensitive sites. Service-learning combines service objectives with learning objectives, with the intent that the activity changes both the recipient and the provider of the service. This constructive and inspiring process

allows students to actively engage and gain real experience with communicating conceptual ideas to communities that otherwise would not be able to afford consultation.

Grichting (Qatar University) is presenting research and projects on edible landscape at the campus of Qatar University to contribute to food supply. Permaculture is used as the philosophy and framework for all the interventions proposed (transforming decorative landscapes into productive landscapes, creating productive green roofs, etc.). Its maximum resource efficiency is experienced through water recycling and treatment, organic waste recycling, clean and renewable energy producing, etc. Projects exposed are also based on the concepts of regenerative cities, and circular metabolism.

Verdini (Xi'an Jiaotong-Liverpool University) is exposing achievements and limitations of 3-years training and action-research for sustainable rural fringe development in urban China. He wants to show how the research titled "When local meets global: urban fringe planning, and institutional arrangement" has informed the development of an innovative training module that equips students with tools for dealing with sustainable food planning, from an institutional perspective. Verdini also shows how this teaching experience has resulted in extra-curricular activities, in forms of intensive workshops in rural villages with the involvement of local stakeholders and governments.

Richtr (Czech Technical University in Prague) is showing that the case study of Detroit reveals the value of urban agriculture in reimagining urban landscapes and food systems of shrinking cities and the importance of a systemic network in this process, with the descriptions of Greening of Detroit (plant trees to replace those lost to Dutch elm disease); Detroit Black Community Food Security Network (address issues of food quality, availability and security especially for the African American community); Earthworks Urban Farms (one of the most well-established urban ag projects); Michigan Urban Farming Initiative (a students' non-profit organization). Richtr underlines that this kind of approach could be transferable to the European cities rather than individual projects and strategies that have to be always carefully contextualized.

Damien Conaré

TRACK 5/ SESSIONS A+C

The Session, moving from the assumption that food is one central element of *flows and networks* that contribute to cities' survival, continuation and well-being, focused on *flows* declined in diverse forms and ways, such as environmental flows, food flows, flows of materials, energy, water, nutrients and waste. The Session was also intended to cover networks that influence the urban food metabolism, going from food production to food consumption and food waste management.

Attendance to the Session was fairly high and the discussion that followed the talks of presenters was lively and enriching. The Session provided insights and points of reflection for the audience as well as good opportunities for networking, given that also other authors present in the Session were interested in discussing more in depth specific cross-cutting issues.

The first contribution to the Session dealt with alternative food networks to examine to what extent such economic practices maintain or enhance resilience and resistance, while taking into account main constraints and opportunities that foster/limit their spread. The investigation focused on mapping grassroots organizations promoting sustainable practices and groups that are contriving an alternative food system in Bergamo, a medium sized town in northern Italy.

The re-territorialization of the food system was an interesting point that stemmed out of the discussion, as this reflection brought forth the 'question of scale' for the food system, more specifically the connection of the food system with its territory, as the local scale appear to be the basis for organizations of 'critical consumption'. Moreover, discussion from the floor was also oriented on alternative food networks as possible driving forces of territorial development.

Are short food supply chains (SFSCs) a major potential contributor to food's environmental footprint or a shift to consumption patterns could have a greater impact? This was one central question posed by the second distribution at the Session which argued positively towards the second hypothesis while proposing SFSCs as major contributors to sustainable consumption patterns through the reconnection to the agricultural territory, the routinization of sustainable behaviors and educational processes.

The discussion and questions that followed posed an interesting discussion on how participation in SFSCs, sustainable consumption practices and local sustainability policy and planning are linked.

The third contribution focused on food flows analysis and mapping, arguing that the urban demand for local food is quite discussed in recent literature, however it appears that mapping precisely those farmlands supplying this demand for local food is not yet explored sufficiently. This contribution offered a critical analysis of the relocalization process of urban food supply by focusing on spatial configuration, surface and location of agricultural areas in Millau, a small town in south France.

From the discussion that followed it appeared that the subject has generated interest, especially as to what extend the methodology followed for mapping the flows of food can be applied in vast areas as well as to what commodities and their number is to be taken into consideration for a comprehensive assessment of a local food system.

Guido Santini e Panayota Nicolarea

TRACK 5/ SESSION D

This session presented four case studies on Alternative Food Networks drawn from 4 different geographical contexts. The countries of reference were Greece, Canada, Spain and China. The panelists presented the evolution of food networks in different social, cultural, economic and environmental contexts. From the discussion that followed the presentations emerged that rather than viewing alternative and conventional food networks as alternatives, they should be considered in relation to one another. Moreover the discussion highlight the need to explore how these new ventures can constitute a viable solution for a more equal and sustainable agro-food system and rewrite the the geography of periurban agriculture with significant implications for spatial policies.

Dario Padovan

SYSTEMIC DESIGN GOES BETWEEN DISCIPLINES FOR THE SUSTAINABILITY IN FOOD PROCESSES AND CULTURES

Silvia Barbero¹, Paolo Tamborrini²

Keywords: Systemic Design, sustainability, food processes

Abstract: An healthy and safe feeding is the key element to ensure a sustainable development for the entire planet. The theme of food is one of the major challenges for the near future, indeed it involves every aspect of our lives. The paper investigates how the Systemic Design approach applied to the food sectors can contribute to decent life and, better, well-being for all, maintaining the planets ecological capacity for future generations.

This research shows the social, economical and environmental benefits generated to real cases that apply the Systemic Design methodology in different food sectors and in different local context. One case is "EN.FA.SI.", in which the value chain related to one PGI bean endorses the entire area involving the small family producers and the local SMEs. The other one is "Fondo Noir", in which the spent coffee ground from the coffee bars in the metropolitan city centre are collected in order to generate many new businesses.

The purpose is to give empirical and theoretical contributions, arising how the complexity of food systems impacts the simplicity of the everyday life solutions. The complexity involved in that kind of design processes interested a wide range of players and it aims to contribute the scientific debate on the role of design as mediator and facilitator among different specific disciplines. The polytechnic culture, at the base of design disciplines, guarantees a model for the eco-innovation also in food sector, with strong and solid approach.

1. Introduction

An healthy and safe feeding is the key element to ensure a sustainable development for the entire planet. The theme of food is one of the major challenges for the near future, indeed it involves every aspect of our lives: a correct behaviour in relation with the territory means respect for ourselves and our health.

The environmental sustainability related to the complex system of food involves the entire food's life cycle and every stakeholders who takes part in it. That includes food's production, transformation, conservation, transport, direct sell to the final consumer, consumption habits and disposal (Figure 1). In food production phase, the hegemony of intensive farming and livestock have caused huge social, ethic and environmental debates (Shiva, 1993), like the consideration for animals and ecosystem exploitation, workers' rights defence and care of consumers health. These needs of huge amount of food force some risky adulteration in production, like the massive use of chemical pesticides or the use of organisms genetically modified, with the consequences related to the food security.

The market request for ready-to-eat, long-lasting meals has determined the actual food processing system. Frozen, long-lasting and freeze-dried meals are worldwide sold in supermarkets, one of the social consequences is the lost of cultural and geographic peculiarities. The transformation fakes and flattens out the appearance of the food that everybody eats. Food's flaws disappear and it's not that rare to get to the phenomena of sophistication and food fraud. Other aspects to be considered in the

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transformation phase are the high level of industrialization in all the processes, with great attention in the sanitation of food (Collins, 2010), that is not bad from itself but should be managed in a sensitive way in case of high migration fluxes like nowadays.

Processed foods are moved among the five continents following fixed roads defined by a highly vertical distribution system. In order to assure to the food a fictitious freshness and a good shape despite the long time and space transportation, sophisticated systems are required. In that situation, the large-scale distribution has a big power.

For sure, the consumer has a crucial role because decides what to eat and consequently what the food system should produce. The main problems related to the consumption phase of food are the loss in the perception of food seasonality, and in the culinary traditions, furthermore people are asking more and more for low-cost food. At global level the contradiction between obesity and malnutrition should be faced in a long term and serious programme for the health and wellbeing of local communities.

Last, but not least, is the disposal phase: every year one third of the food intended for human consumption is thrown away. The struggle against food waste and losses is one of the challenges of this century.

The change in human diet habits can have the power and the responsibility to modify the entire system. The increase of awareness in the personal food and nutritive choice will lead that change. A great possibility consists in the promotion of new behaviours and new model of consumption: re-discovery the culinary practices of waste reuse, well known to the previous generations, it becomes essential to create new ethical systems to share the nourishment in excess as well as to avoid upstream the food over-production.

The paper investigates how the Systemic Design approach applied to the food sectors can contribute to decent life and, better, well-being for all, maintaining the planets ecological capacity for future generations (L. Bistagnino, 2009).

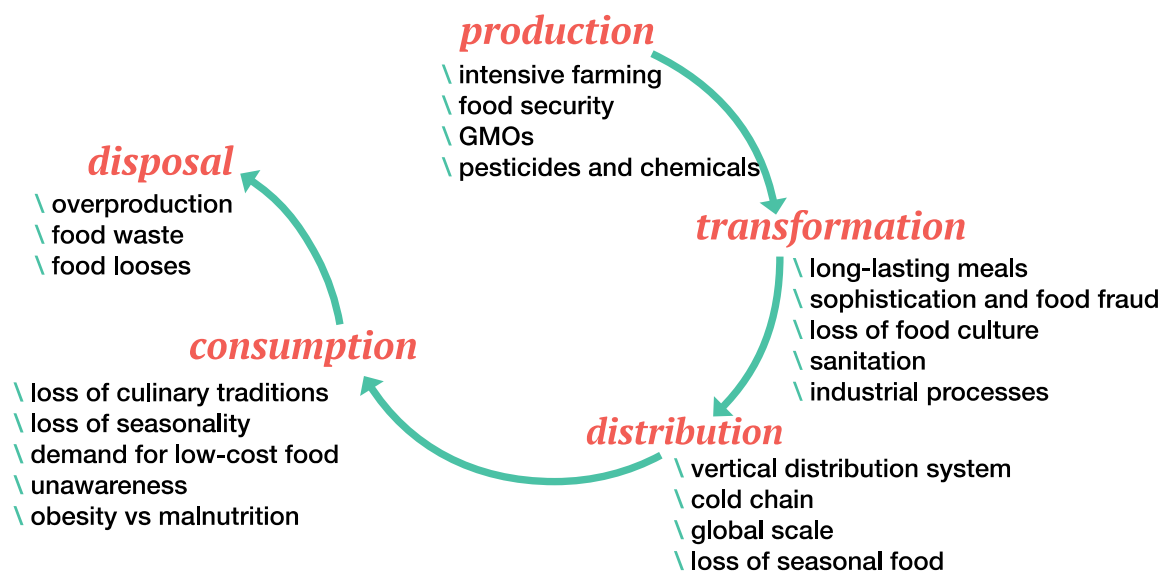


Figure 1. The main problems related to the life cycle of food system.

2. Justification

The problems expressed in the introduction are interrelated each others in a complex network of relations and implications, hence, it is needed a new way facing the food productive processes in order to obtain multi-benefits for the environment, the society and the economy.

The theories about complexity help the management of the entirely food systems and the design approaches help the planning of different divergent elements.

The complexity theories evolved on the basis that living systems continually draw upon external sources of energy and maintain a stable state of low entropy, as the physicist Erwin Schrödinger asserted after the WWII, on the basis of the General Systems Theory by Karl Ludwig von Bertalanffy. Some of the next rationales applied those theories also on artificial systems: complexity models of living systems address also productive models with their organizations and management, where the relationships between parts are more important than the parts themselves. Treating productive organizations as complex adaptive systems allows a new management model to emerge in economical, social and environmental benefits (Pisek & Wilson, 2001). In that field, Cluster Theory (Porter, 1990) evolved in more environmental sensitive theories, like Industrial Ecology (Frosh & Gallopoulos, 1989) and Industrial Symbiosis (Chertow, 2000).

The design thinking, as Buchanan said in 1992, means the way to creatively and strategically reconfigure a design concept on a situation with systemic integration. This needs a strong inter- and trans-disciplinarity during the design phase (Fuller, 1981), with the increasing involvement of different disciplines including urban planning, public policy, business management and environmental sciences (Chertow, Ashton, & Kuppali, 2004). However, the design thinking doesn't explicitly include the social aspects, so new evolution in the discipline is needed: the Systemic Design (Jones, 2009). Food is an overarching social phenomenon that incorporates the very essence of the humanity (Maffei, 2015).

The Systemic Design is planning the flows of matter and energy that flow from a system to another one towards zero emissions, creating a new economic-productive model, a community of strongly related people and a conscious connection with the territory. According to comprehensive approaches, as Systemic Design and Blue Economy (G. Pauli, 2010), they define many eco-guidelines, based on different practices and systems of goods production, transformation and consumption. This would allow defining new food systems, promoting social and environmental development.

The purpose of this paper is to give empirical and theoretical contributions with developed, developing and transition perspectives. From two of the case studies, directly developed by the authors in the last five years, arise how the complexity of food systems impacts the simplicity of the everyday life solutions. Its role is crucial in the environmental context and in the development of the local territory.

3. Methodology

Before dealing with the projects, it is necessary to clarify the applied methodology: Systemic Design.

The first step in planning with that methodology is the holistic survey of the current state of affairs: it clearly outlines all the steps and actions undertaken and/or undergone by the context in question. In order to do so, the description of what enters the system (input), its origins, what happens inside it and, finally, what comes out of it, its destination and its possible use (output) is done. The analysis of these inputs and outputs will have to be of two different kinds: quantitative, so as to know the quantities that are moved around; qualitative, to know exactly what can be fully used.

In addition, the identification the players involved in the system, their nature, their know-how and their reciprocal relations is crucial.

These actions help to understand the relationship occurring between the parties and the context, as well as the communication they have, one with the others and with the production, transformation and marketing sites.

These steps enable to have a clear idea of:

- the needed resources, their features and origins;
- processing waste, their specific qualities and their final destination;
- what occurs throughout the processes, comparing the specific differences of inputs and outputs.

The result is a chart with the global vision of the process and of the overall relationships that characterize and make the system work. At this point one can notice how useless and contradictory it is to focus merely on the individual parts, ignoring the links with the elements existing inside, outside and all around the process. Moreover, an approach by single parts has proved to be in contrast with the dynamism of the whole and with the "traditional" efficiency of the natural systems.

At the state of affairs, one can ascertain that, within the current intensive productions, many choices are made uncritically, sometimes according to maintain a linear-oriented tradition which has proved, at present, to be rather defective.

The safeguard of this global vision, beneficial to the sustainable transformation of the processes, can be attained by drawing a graphic chart, allowing us to retrace both with eyes and mind, the flows of matter and energy, their use, the knowledge capitals, the relationships between the actors, and the contextualization of the system in analysis. These graphic schemes allow simultaneous synoptic views of the values at stake, and for the overall number of criticalities to be faced and solved. Particularly the latter are represented within a process and are to be taken into account in comparison with it. The causes of problems can be ascertained when they occur, or in the light of previous choices or phases, or because of their misinterpretation, or even within the value generated in the course of the following steps. Every problem is assessed according to different parameters, such as advantages and economic value, environmental sustainability, correlation with the territory and production flexibility. Each of these parameters is evaluated both from a quality and quantity point of view. In turn, the study of the quantity allows to outline an economic scheme of the whole, giving conclusive evidence of the fact that the entire process, besides being based only on the production focus, can only be improved by increasing the number of products considerably.

This peculiarity of the present economic/productive system, and the consequential on-going increase in the quantity of waste, are real issues to be dealt with in the forthcoming future, if we wish to develop our society in a positive and satisfactory way (Campagnaro, 2011).

Identifying the problems and trying to understand them leads to a clearer perception of the phenomena they have arisen from. Physics, biology, chemistry, mathematical sciences, history and economy, are the indispensable tools for this analysis. A designer is asked to coordinate, enhance and harmonize their contributions and to change the faults in the dynamic flow of the production.

Nature is the system par excellence, following nature's footsteps the designer reorganize the starting point of the current situation, to identify less energy-consuming processes and productions, and to emphasize the neglected qualities of the outputs as much as possible. By doing so, all kinds of matter may be turned into input for other productions or systems, via connections that may be entwined with the productive realities carried out on the territory.

A systemic project prevents focalisation only on one product and tends to privilege complexity, local dimension and flexibility. This enables to revitalize and resume the normal links between each firm and its own context, based on the outputs it has produced, and to prioritise the decrease in the number of items that have not been adequately enhanced (waste).

Thinking by connections is the only applicable solution when attempting to solve the problem of the environmental impact, a burden placed on the territory, on account of intensive productions. In conformity with the consistency between outputs available and required inputs, a designer may conceive useful connections and interactions, and think of more innovative ways to employ matter. This will enable one to arrive at new productions and forms of energy generation, and will commit the many players of a territory to modern, flexible and multipolar economic models.

The heart of the project is set on very specific assumptions. The presence of pollution and disposable waste, implies that human and material resources are being misused. A more adequate employ of the same may result in new production processes, new opportunities to make profits and new forms of coexistence between production and reproduction activities, in compliance with the new parameters for a modern and sustainable balance within the ecosystem.

A new graphic table can be done with the systemic view, so it shows a remarkable increase both in the flows of the energy production and metabolized materials.

This designing methodology has different types of positive outcomes: a decrease in the number of individual products, focussing on building a balanced relationship with the resources of the territory; an exponential growth of production capacity of the territory; new and more useful material assets; better quality services, administered to the community; increased productivity; more job opportunities. These outcomes, which are not detrimental to the quality of life, should also prove that, a positive dialogue with the territory, involves taking notice of the material culture and enhancing knowledge that one needs to place within the historical context of reference.

The field of research regards multidisciplinary, which provides the foundation for the systemic approach, as the only way to go for future development. The possibility of observing real examples of systemic integration on the ground, starting new scientific, economic, sociologic and politic research partnerships with the other actors from the territory, leads towards an open dialogue among the players, a strong sense of collective sharing and triggers a highly innovative territorial development that takes its components into account.

Systemic design opens up the possibility of innovative and virtuous business models in which the waste, that is today a burden, tomorrow can become a resource for new industrial systems offering numerous opportunities of development in the region, in productive areas and in connected services.

4. Analysis and discussion of findings

This paper shows the social, economical and environmental benefits generated to real cases that apply the Systemic Design approach in different food sectors and in different local context, in order to enforce the potentialities of the application of this methodology.

The first one is "EN.FA.SI." (co-funded by the Piedmont Region) in which the value chain related to the PGI bean, Fagiolo Cuneo, endorses the entire area involving the small family producers and the local SMEs.

The second one is "Fondo Noir" (funded by Lavazza company) in which the spent coffee ground from the coffee bars in the metropolitan city centre are collected by cargo-bike in order to generate many new businesses.

Thinking about a food territorial system means the guidance of politic, scientific, organisational, designing processes, based on the generation of increased relationships, shared visions and strategies (cross, pervasive, and fundamental ones).

4.1 EN.FA.SI

The agri-food sector is proving to have particularly high impact because of the use of pesticides and fertilizers, the consumption of energy and natural resources, the emissions of greenhouse gases and the large amount of waste produced.

Recently, Politecnico di Torino has engaged in research activities in the agro-food industry, using the Systemic Design methodology, especially in the Cuneo Bean cultivation because it showed several conceptual criticalities and a production system which required redesigning, initially employing an excessive use of natural and artificial resources, such as synthetic products, energy, as well as waste of secondary raw materials (Fiore & Tamborrini, 2014). The project included a feasibility study, followed by the industrial testing of each stage of production. This involved many local SMEs (in some cases family-owned businesses).

The design of a complex system in which outputs are valued as input of other production sectors, ensures environmental benefits such as the reducing of wastes. It evolved also economic benefits, such as the development of several new economies in the area. A graphical view of the system complexity with all the interconnected activities helps to underline material and energy flows, inputs and outputs (Figure 2).

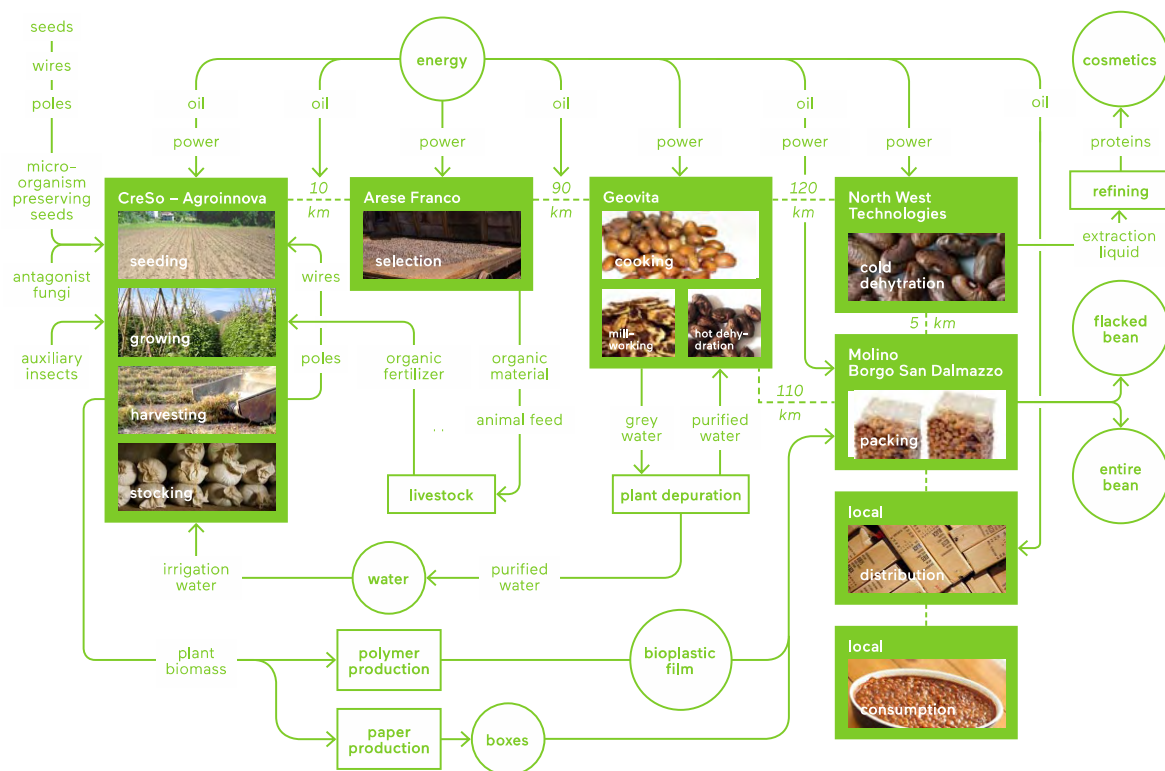


Figure 2. The complex system designed for the EN.FA.SI project.

4.2 Fondo Noir

Annual generation of Spent Coffee Grounds (SCG) is estimated around six million tonnes per year. They currently do not have a commercial value and are disposed of in landfills or as compost. The Systemic Design project provides a holistic vision in which these production are linked together through relationships, output and input, flows of energy and materials, in order to make the SCG recovery activity complex, with almost no waste.

Nowadays, SCG need to be disposed of in a controlled way, because the residual caffeine, tannins and polyphenols could have negative effects on the environment (Panusa et al., 2013). In addition to the elements listed, SCG contain also other elements such as minerals, melanoidins, lipids and waxes, lignin, proteins, ashes and polysaccharides (cellulose and hemicellulose are a little less than 50% in the anhydrous SCG). These components have high quality and physical characteristics that can be exploited.

The objectives of the work are not only the creation of a system that gives new life to the SCG but also the educational and social aspects related to the valorisation of waste. The project is carried out by Politecnico di Torino (Department of Architecture and Design), in collaboration with the biggest Italian coffee roasted company (Lavazza SpA) (Barbero, Fiore, 2014).

SCG should be split into their two constituent elements: the oils and the exhausted coffee grounds, each of which finds different application sectors. The first one can be used in cosmetics, energy and cleaning sectors; the second one in agronomy, print, energy, plastics and building sectors. It is necessary to systematize the activities, to understand what should be done first, the necessary working operations and the characteristics of the material after such operations (Figure 3).

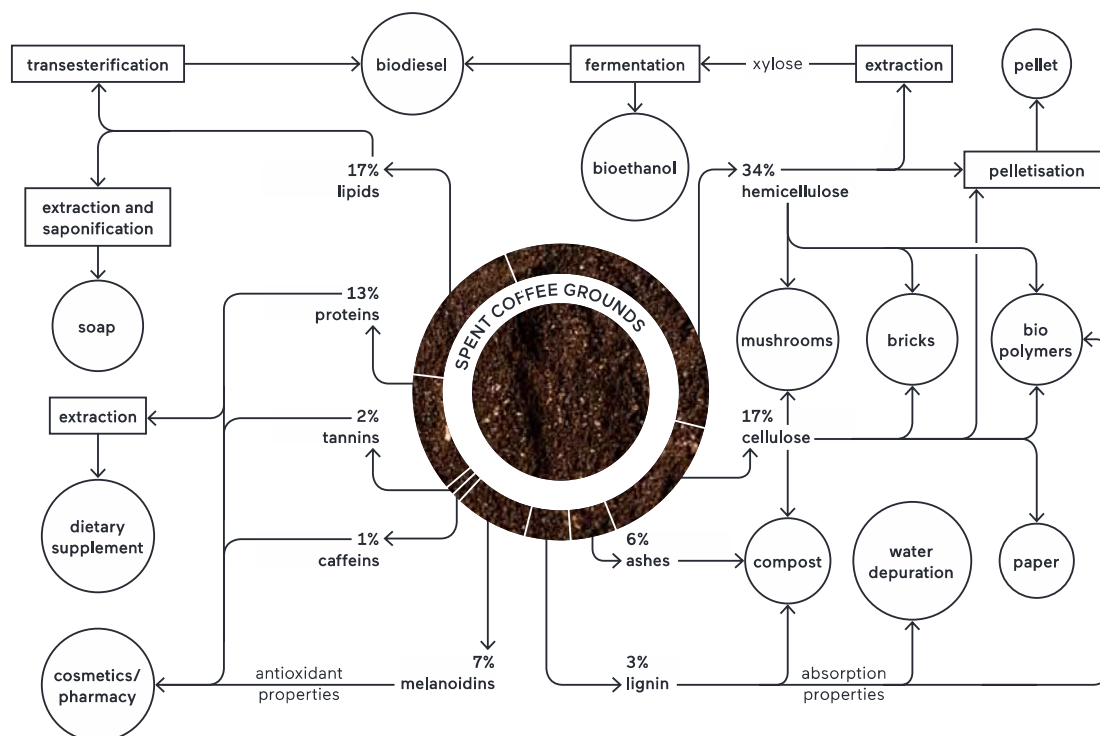


Figure 3. The complex system designed for Fondo Noir project.

5. Conclusions

Data show that major levels of overproduction, waste, surplus and underutilization are consequential to intensive productions, in addition to its core business. Turning these features into resources for the territory means giving new opportunities to all those who are more likely to incur the costs of their disposal. If we exploit the sense of territorial belonging of the resources we may boost a type of development that favours the local dimension and allows the sprouting of self-sufficient realities, able to produce, supply and generate energy autonomously, and there will be a dramatic decrease in the number of long haul transportation.

The complexity involved in that kind of design processes interested a wide range of players and it aims to contribute the scientific debate on the role of design as mediator and facilitator among different specific disciplines (Germak, 2009). The polytechnic culture, at the base of design disciplines, guarantee a model for the eco-innovation also in food sector, with strong and solid approach.

This methodology can be fostered because it is proven and gives answer to the problems listed in the introduction. It has the promising ability to deliver new diplomas in this field.

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